

an electrical connection region formed on a periphery of said first face;
a covering structure, covering said first face;
a metallic lead affixed to the connection region and extending across the plane of the third face; and
a heat dissipation region, in direct contact with said second face.

33. (New) The device of claim 31, further comprising an opening in the covering structure over the connection region.

REMARKS

Claims 1-9 and 27-33 will be pending upon entry of the present amendment. Claims 1 and 4 are amended, claims 10 and 11 are canceled, and new claims 27-33 are submitted.

The Examiner has rejected claims 1-11 under 35 U.S.C. § 102(e) as being anticipated by Val et al. (U.S. Patent No. 6,307,261B1).

Claim 1 has been amended to recite, in part, "an electrical connection region formed on a periphery of said first face" and "an opening in said covering structure, the opening sized and positioned to expose a portion of the first face, including said electrical connection region, and configured to admit a lead extending in a direction substantially parallel to the first face, to contact the electrical connection region." Val fails to teach an opening in a covering structure configured to admit a lead extending in a direction substantially parallel to the first face, but rather, describes a coating formed around upright leads. Val teaches the formation of leads "standing up substantially perpendicularly at the sites of the chips" (see col. 3, lines 40-41). Inasmuch as the manufacturing process disclosed by Val includes the formation of a coating of a polyamide or epoxy resin material *after* the formation of the metal leads (see col. 3, lines 26-29 and 41-44), openings in the coating will naturally conform exactly to the shape and orientation of the metal leads 6, and cannot be made to do otherwise. The coating is not configured to admit leads from any direction except perpendicular to the surface of the substrate (see Figure 6), nor would it be obvious to modify the device disclosed by Val by attaching leads from a direction other than perpendicular to the surface of the substrate prior to formation of the coating,

inasmuch as such a modification would make it impossible to connect the leads to the metalized contacts on the surface of the coating, thereby rendering the device inoperative. Accordingly, claim 1 is now in condition for allowance. Dependent claims 2-9 and 27-30 are now also in condition for allowance.

Claim 4 is amended to depend from claim 1.

New claims 27-30 are allowable on their own merits, apart from depending from an allowable claim. Claim 27 recites “a metallic lead affixed at a first end to the electrical connection region and extending from the connection region in a direction substantially parallel to the first face.” As previously explained with reference to claim 1, Val fails to teach a lead extending in a parallel direction relative to the face of the substrate.

Claim 28 recites “wherein a surface area of the portion of the metallic lead in contact with the electrical connection region and affixed thereto is less than the surface area of the portion of the first face.” Val fails to teach such a limitation. As previously explained with reference to claim 1, the manufacturing process disclosed by Val includes the formation of a surface coating after the metallic leads are attached (see col. 3, lines 40-45, and Figures 6, 9, and 10) and thus, an area exposed by the surface coating is exactly equal to the surface area of the metal contact connected thereto.

Claim 29 recites “wherein a second end of the metallic lead is affixed to a flexible strip.” Val fails to teach this limitation, but rather teaches connection of the metal leads to metalized electrical connection contacts on the surface of the coating (see col. 3, lines 56-58).

Claim 30 recites “wherein a second end of the metallic lead is affixed to a contact pad on a ceramic base.” Val fails to teach this limitation, but rather, as indicated with reference to claim 29, teaches connection to metalized electrical connection contacts on the surface of the coating. For at least the reasons stated above, claims 27-30 are allowable over the cited prior art.

While the language and scope of new independent claims 31 and 32 differ from each other and from claim 1, the allowability of claims 31 and 32 will be evident in light of the arguments put forth in support of claim 1.

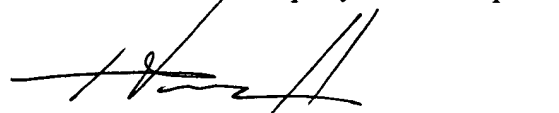
Attached hereto is a marked-up version of the changes made to the specification and claims by the current amendment. The attached page is captioned “**Version With Markings to Show Changes Made.**”

All of the claims remaining in the application are now clearly allowable. Favorable consideration and a Notice of Allowance are earnestly solicited. In the event the Examiner finds minor informalities that can be resolved by telephone conference, the Examiner is urged to contact applicants' undersigned representative at (206) 622-4900 in order to expeditiously resolve prosecution of this application. Consequently, early and favorable action allowing these claims and passing this case to issuance is respectfully solicited.

Respectfully submitted,

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VERSION WITH MARKINGS TO SHOW CHANGES MADE

In the Claims:

Claims 10 and 11 are cancelled, and claims 1 and 4 are amended as follows:

1. (Amended) An electronic device, comprising:
a body of semiconductor material having a first and a second face;
an electrical connection region formed on a periphery of said first face;
a covering structure, covering said first face;
an opening in said covering structure, the opening sized and positioned to expose
a portion of the first face, including said electrical connection region, and configured to admit a
lead extending in a direction substantially parallel to the first face, to contact the electrical
connection region: and;
a heat dissipation region, in direct contact with said second face.
2. The electronic device of Claim 1, wherein said heat dissipation region and said second face of said body have equal area.
3. The electronic device of Claim 1, wherein said heat dissipation region is of metal, preferably of copper.
4. (Amended) The electronic device according to claim 31, wherein said heat dissipation region has a thickness of 50 to 200 μm .
5. The electronic device according to claim 1, wherein said covering structure comprises a passivation region and a protective region of a polymer material.
6. The electronic device of Claim 5, wherein said polymer material comprises polyimide.

7. The electronic device of Claim 5, wherein said polymer material comprises "SU8".

8. The electronic device according to claim 5, wherein said protective region is opaque.

9. The electronic device according to claim 5, wherein said protective region has a thickness of 20 to 70 μm .

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